

Applicant : Pearson
Appl. No. : 10/568,403
Examiner : Yevgeny Valenrod
Docket No. : 16515.4001

Claims:

1. — 44. (Cancelled)

45. (Currently Amended) A method for controlling the proportions of carbon monoxide, hydrogen and methane in a syngas stream leaving a feedstock reformer, in which a non-char solid organic material based feedstock having a moisture content in a range of about 5% to 20% is introduced into the feedstock reformer at an elevated temperature, said process comprising:

adjusting a contact time of the feedstock at elevated temperatures in the reformer within a range of from about 0.4 seconds to about 5.0 seconds, wherein the contact time is a function of the internal volume of the reformer divided by the flow rate of the syngas exiting the reformer , and

adjusting the exit gas temperature of the syngas as it leaves the reformer to between about 871° C. (1600° F.) and about 1204° C. (2200° F.), to achieve proportions of carbon monoxide, hydrogen and methane most closely approximate those desired given the intended use of the syngas.

46. (Previously Presented) The process of claim 45 which includes introducing said feedstock and superheated steam into the feedstock reformer at about 204° C. (400° F.).

47. (Currently Amended) The process of claim 46 in which said syngas exit temperature and contact time are adjusted to produce a syngas most optimally proportioned to produce lower alcohols, by adjusting said syngas exit temperature ~~to~~ from about 898° C. (1650° F.) to ~~about~~ below 926° C. (1700° F.), and said contact time from about 1.0 seconds to about 3.0 seconds.

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48. (Original) The process of claim 47 in which said contact time is adjusted to from about 1.4 seconds to about 2.0 seconds.

49. — 57. (Cancelled)

58. (Previously Presented) The process of claim 45 wherein the feedstock is introduced into the reformer at a pressure in a range of about 241 kilopascal (35psig) to about 276 kilopascal (40 psig).

59. (Previously Presented) The process of claim 45 wherein the feedstock is introduced into the reformer with steam.

60. (Previously Presented) The process of claim 45 further comprising the step of adjusting the amount of steam introduced with the feedstock into the reformer.